

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A device for sealing a puncture extending through tissue proximal to an interior vessel surface, the device comprising:

a first disk having a self-expanding first bare wire frame that forms a plurality of petals, the plurality of petals having a first end and a second end;

a joint connected to the first end and second end of the plurality of petals; and

a proximal element having a second bare wire frame coupled to the first frame, the first disk being configured to be releasably coupled to the proximal element;[[,]]

~~wherein~~ the first disk-device having[[s]] a retracted delivery configuration adapted for delivery to the puncture[[,]] and an expanded deployed configuration in which the first disk is adapted to engage with and substantially conform to the interior vessel surface, and the proximal element [[is]] having a retracted delivery configuration for delivery to the tissue proximal to the puncture and a retracted deployed configuration configured to engage the tissue proximal to the interior vessel surface.

2. (Previously Presented) The device of claim 1, wherein the first disk is configured to be released from engagement with the interior vessel surface.

3. (Canceled)

4. (Previously Presented) The device of claim 1, wherein the proximal element comprises a second disk.

5. (Previously Presented) The device of claim 4, wherein the first disk is attached to a nut and the second disk is attached to a bolt, the nut configured to be releasably coupled to the bolt.

6. (Currently Amended) The device of claim 5 [[1]], further comprising at least one delivery shaft configured to facilitate coupling of the first disk to the proximal element;

the at least one delivery shaft including at least first and second delivery elements,

the first delivery element being configured to engage with a keyway on the nut for positioning the first disk relative to the interior vessel surface and for holding the first disk in a stationary position relative to the bolt,

the second delivery element being configured to engage with at least one slot on the bolt for driving the bolt relative to the nut to position the first disk in sealing engagement against the interior vessel surface and to position the proximal element in engagement with the tissue proximal to the interior vessel surface.

7. (Previously Presented) The device of claim 1, further comprising at least one delivery element constrained to translate a maximum distal depth.

8. (Previously Presented) The device of claim 6, wherein the at least one delivery shaft is configured to facilitate decoupling of the first disk from the proximal element.

9. (Previously Presented) The device of claim 1, wherein the proximal element comprises a spring.

10. (Previously Presented) The device of claim 1, wherein one or both of the first disk and the proximal element comprises barbs, hooks, sharp edges, or roughened surfaces.

11. (Previously Presented) The device of claim 1, further comprising a membrane encasing at least the self-expanding frame of the first disk.

12. (Previously Presented) The device of claim 1, further comprising a coagulant-enhancing agent disposed on one or both of the first disk and the proximal element.

13. (Previously Presented) The device of claim 1, wherein the device comprises a biodegradable material.

14. (Currently Amended) A device for sealing a puncture extending through tissue proximal to an interior vessel surface, the device comprising:

a first self-expanding disk having a first bare wire frame and a second self-expanding disk having a second bare wire frame, the frames of the first and second disks forming a plurality of petals, the plurality of petals having a first end and a second end; and

a joint connected to the first end and second end of the plurality of petals, the first disk including a first threaded member and the second disk including a second threaded member, the first and second threaded members being configured for-to-be releasably coupling[[ed]] the first disk to the second disk;

the first threaded member including a keyway and the second threaded member including at least one slot, the keyway being adapted to permit positioning of the first disk relative to the interior vessel surface and for holding the first disk in a stationary position relative to the interior vessel surface, and the at least one slot being adapted for driving the second threaded member relative to the first threaded member, and

wherein the device is configured to be released from engagement with the interior vessel surface after full deployment of the device, thereby permitting the device to be repositioned.

15. (Previously Presented) The device of claim 14, wherein the second self-expanding disk substantially conforms to the interior vessel surface.

16. (Previously Presented) The device of claim 14, further comprising a membrane encasing at least the second self-expanding disk.

17. (Previously Presented) The device of claim 14, further comprising a coagulant-enhancing agent disposed on one or both of the first and second self-expanding disks.

18. (Canceled)

19. (Currently Amended) The device of claim 14, ~~further~~ the first threaded member comprising a nut and the second threaded member comprising a bolt, wherein the first self-expanding disk is attached to the nut and the second self-expanding disk is attached to the bolt, the nut configured to be releasably coupled to the bolt.

20. (Previously Presented) The device of claim 14, further comprising at least one delivery shaft configured to facilitate coupling of the first self-expanding disk to the second self-expanding disk.

21. (Previously Presented) The device of claim 20, wherein the at least one delivery shaft is configured to facilitate decoupling of the first self-expanding disk from the second self-expanding disk.

22-23. (Canceled).

24. (Previously Presented) The device of claim 14, wherein the device comprises a biodegradable material.

25. (Withdrawn) A device for sealing a puncture extending through tissue proximal to an interior vessel surface, the device comprising: a nut coupled to a bolt, wherein the device is configured to be releasably engaged to the interior vessel surface.

26. (Withdrawn) The device of claim 25, wherein the bolt is configured to substantially conform to the interior vessel surface.

27. (Withdrawn) The device of claim 25, wherein the nut is configured to be releasably coupled to the bolt.

28. (Withdrawn) The device of claim 25, wherein the nut comprises a first self-expanding disk and the bolt comprises a second self-expanding disk.

29. (Withdrawn) The device of claim 25, wherein the device is biodegradable.

30. (Currently Amended) A device for sealing a puncture extending through tissue proximal to an interior vessel surface, the device comprising:

a first disk having a self-expanding first bare wire frame that forms a plurality of petals, the plurality of petals having a first end and a second end;

a joint connected to the first end and second end of the plurality of petals; ~~and~~

a proximal element having a second bare wire frame coupled to the first frame, wherein at least part of the device is biodegradable, the first disk being configured to be releasably coupled to the proximal element;

the first disk including a first threaded member and the proximal element including a second threaded member, the first and second threaded members being configured for releasably coupling the first disk to the proximal element;

the first threaded member including a keyway and the second threaded member including at least one slot, the keyway being adapted to permit positioning of the first disk relative to the interior vessel surface and for holding the first disk in a stationary position relative to the interior vessel surface, and the at least one slot being adapted for driving the second threaded member relative to the first threaded member while the first disk is held in the stationary position relative to the interior vessel; and

the first disk having a retracted delivery configuration adapted for delivery to the puncture and an expanded deployed configuration in which the first disk is adapted to engage with and substantially conform to the interior vessel surface, and the proximal element being configured to engage the tissue proximal to the interior vessel surface,

wherein the first disk and the proximal element are biased toward one another such that first disk is held in sealing engagement against the interior vessel surface by the proximal element being engaged with the tissue proximal to the interior vessel surface.

31. (Canceled)

32. (Previously Presented) The device of claim 30, wherein the device is configured to be releasably engaged to the interior vessel surface.

33. (Previously Presented) The device of claim 30, wherein the first disk is configured to be releasably coupled to the proximal element.

34. (Previously Presented) The device of claim 30, wherein the proximal element comprises a second disk.

35. (Previously Presented) The device of claim 34, wherein the first disk is attached to a nut and the second disk is attached to a bolt, the nut configured to be releasably coupled to the bolt.

36. (Previously Presented) The device of claim 30, wherein the proximal element comprises a spring.

37. (Previously Presented) The device of claim 30, wherein one or both of the first disk and the proximal element comprises barbs, hooks, sharp edges, or roughened surfaces.

38. (Previously Presented) The device of claim 30, further comprising a minimally invasive delivery element configured to deliver the first disk and the proximal element.

39. (Previously Presented) The device of claim 30, further comprising at least one delivery element constrained to translate a maximum distal depth.

40. (Currently Amended) A device for sealing a puncture extending through tissue proximal to an interior vessel surface, the device comprising:

a first disk having a self-expanding frame that forms a plurality of petals, each petal of the plurality of petals having a first end, a second end disposed adjacent to the first end, and an intermediate portion extending from the first end towards the second end;

a joint directly connected to the first end and second end of each of petal of the plurality of petals;

a proximal element releasably coupled to the first disk;

the first disk including a threaded nut and the proximal element including a threaded bolt, the threaded nut and the threaded bolt being configured for releasably coupling the first disk to

the proximal element, the threaded bolt being configured to be driven relative to the threaded nut;

the first disk having a retracted delivery configuration adapted for delivery to the puncture and an expanded deployed configuration in which the first disk is adapted to engage with and substantially conform to the interior vessel surface, and the proximal element having a retracted delivery configuration for delivery to the tissue proximal to the puncture and a retracted deployed configuration configured to engage the tissue proximal to the interior vessel surface,

a minimally invasive delivery apparatus comprising first and second delivery elements configured to at least selectively limit distal translation of the first delivery element with respect to the second delivery element so that only the first disk is extended out of the minimally invasive delivery apparatus; and

the minimally invasive delivery apparatus further comprising third and fourth delivery elements;

the third delivery element being configured to engage with a keyway on the threaded nut for positioning the first disk relative to the interior vessel surface and for holding the first disk in a stationary position;

the fourth delivery element being configured to engage with at least one slot on the threaded bolt for driving the threaded bolt relative to the threaded nut to hold the first disk in sealing engagement against the interior vessel surface and to position the proximal element in engagement with the tissue proximal to the interior vessel surface; and

the third and fourth delivery elements being further configured to permit the first disk to be released from engagement with the interior vessel surface, thereby permitting the device to be repositioned.